

**U.S. DEPARTMENT OF ENERGY
NATIONAL NUCLEAR SECURITY ADMINISTRATION
NEVADA OPERATIONS OFFICE**

ORDER

NV O 413.X

Approved: 03-05-02
Review Date: 03-05-04
Expires: 03-05-06

**PROJECT MANAGEMENT
PRINCIPLES AND PRACTICES**



INITIATED BY:
Office of the Assistant Manager
for Technical Services

PROJECT MANAGEMENT PRINCIPLES AND PRACTICES

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1. OBJECTIVE. To establish the requirements for management of the National Nuclear Security Administration Nevada Operations Office (NNSA/NV) DOE O 413.3 projects and designated activities.
2. CANCELLATION. None.
3. APPLICABILITY.
 - a. The provisions of this Order apply to all NNSA/NV organizational elements.
 - b. Contractor requirements are contained in the Contractor Requirements Document (CRD), Attachment 1. Compliance with the CRD is required to the extent set forth in an NNSA/NV contract.
4. REQUIREMENTS. For a summary of requirements, reference Attachment 2, "Requirements Applicability Matrix."
 - a. DOE O 413.3 Projects. NNSA/NV activities which meet the requirements established in DOE O 413.3 for a Capital Asset Project will be managed in accordance with the principles and practices contained within the Order. Specific NNSA/NV implementation requirements are as follows:
 - (1) Designation of DOE O 413.3 Projects.
 - (a) Division Directors will review their respective activities for applicability of DOE O 413.3 requirements and identify to their respective Assistant Manager (AM) the candidate projects for designation as DOE O 413.3 projects.
 - (b) Activities which meet requirements of DOE O 413.3 will be formally designated by the respective AM as DOE O 413.3 projects and formally communicated to the applicable U.S. Department of Energy Headquarters (DOE/HQ) and NNSA components and the Manager per requirements of the Order.
 - (2) Designation of Federal Project Managers (FPM). The AM responsible for each DOE O 413.3 project will formally recommend an FPM to the applicable DOE/HQ and NNSA components and/or Manager for approval per requirements of the Order.

- (3) Qualification Requirements for FPMs. FPMs will be qualified in accordance with either the Technical Qualification Program (TQP) for “Project Management” or the TQP for “Construction Management and Engineering.” Incumbents will have 18 months in which to become qualified. For DOE O 413.3 projects involving Special Nuclear Material, qualification shall be in accordance with the TQP for “Project Management.”
- (4) Performance Requirements.
 - (a) DOE O 413.3 establishes Total Project Cost (TPC) thresholds for DOE O 413.3 projects. Formal Energy Systems Acquisition Advisory Board (ESAAB) reviews will be conducted for DOE O 413.3 projects which fall under the purview of DOE/HQ and/or NNSA in accordance with requirements contained within the Order and Program Office requirements. For DOE O 413.3 projects which fall within the purview of the Manager, the ESAAB equivalent process defined in Attachment 3 will be used to review and approve Critical Decisions (CD) and Baseline Change Control (BCC) requests. DOE O 413.3 and its associated Manuals provide clear guidance as to the definition of CDs, the approval process for CDs, and the process for BCC requests.
 - (b) DOE O 413.3 projects will address acquisition planning as applicable per requirements of DOE O 413.3.
 - (c) DOE O 413.3 projects will have a formal integrated project baseline defining scope, cost, and schedule in accordance with DOE O 413.3 and applicable DOE/HQ and NNSA Program Offices’ requirements.
 - (d) DOE O 413.3 project baselines will be under formal configuration management practices with all changes to the baseline subject to formal BCC in accordance with DOE O 413.3, applicable DOE/HQ and NNSA Program Offices’ Directives, and/or the applicable AM requirements.
 - (e) DOE O 413.3 projects will have a Project Execution Plan (PEP) developed in accordance with DOE O 413.3 requirements. The PEP

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will document and provide a common understanding of the tailored approach taken by the FPM and the Integrated Project Team (IPT) to address project management requirements.

- (f) DOE O 413.3 projects will have a formal task plan, work authorization, and corresponding funding authorization documents which authorize work on a project to begin in accordance with applicable DOE/HQ and NNSA Program Offices' requirements and/or the applicable AM requirements.
- (g) DOE O 413.3 projects will have a formally designated IPT which is comprised of the FPM, a representative from the DOE/HQ and NNSA Program Offices, the Facility Representative (FR) (if applicable), and applicable Subject Matter Experts (SME), as well as contractor personnel who have the appropriate background and experience in project management; contracting; fiscal; legal; security; environment, safety, and health (ES&H); and other technical areas.
- (h) Formal monthly progress reporting by the FPM with input from the applicable contractor(s) will be performed in accordance with DOE O 413.3, the applicable DOE/HQ and NNSA Program Offices' requirements, and the applicable AM requirements. All DOE O 413.3 projects will track and report progress using earned value data.
- (i) Formal Quarterly Project Reviews (QPR) will be conducted in accordance with DOE O 413.3 requirements, the applicable DOE/HQ and NNSA Program Offices' requirements, and the applicable AM requirements. The Office of Engineering and Construction Management (OECM) will be invited to participate in all performance reviews with a TPC over \$5M.
- (j) External Independent Reviews and Independent Project Reviews (IPR) will be conducted on DOE O 413.3 projects in accordance with the Order as requested by the applicable DOE/HQ and NNSA Program Offices or as requested by the applicable AM.

- (k) Independent Cost Reviews (ICR) will be conducted on DOE O 413.3 projects in accordance with the Order as requested by the applicable DOE/HQ and NNSA Program Offices or as requested by the applicable AM.
 - (l) Management Reviews will be conducted on DOE O 413.3 projects as needed to identify issues and concerns, remove barriers, and to ensure safety and the success of the project.
 - (m) Value Engineering studies will be conducted where appropriate to ensure alternative approaches are properly considered.
- b. Designated Activities. Designated activities are activities that can be managed using tailored principles and practices from DOE O 413.3, and have a responsible federal individual that controls at least two out of the three facets of project management (cost, scope, and schedule). Designated activities will be managed in accordance with the principles and practices as follows:
 - (1) Designation of Activities.
 - (a) Division Directors will review their respective programs and functions' task plans, and discuss with the contractors which of those activities meet the definition of a designated activity. These activities will be identified to the applicable AM as candidates for designated activities.
 - (b) Activities will be formally designated by the applicable AM as a designated activity, and communicated to the Manager.
 - (2) Designation of Program, Project, and Functional Managers (PM/FM). The AM responsible for each designated activity will formally recommend a PM or FM to the Manager for approval.
 - (3) Qualification Requirements for PMs/FMs. PMs/FMs will be qualified in accordance with the TQP for "Technical Program Manager" **and** the TQP for the Applicable Functional Area if required. Incumbents will have 18 months in which to become qualified.

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(4) Performance Requirements.

- (a) Designated activities will have formal integrated baselines defining scope, cost, and schedule.
- (b) Baselines for designated activities will be under formal configuration management practices with all changes to the baseline subject to formal baseline change control.
- (c) PEPs or equivalents for designated activities will be developed. The PEP or equivalent will document and provide a common understanding of the tailored approach taken to address project management requirements.
- (d) Designated activities will have formal task plans, work authorization, and corresponding funding authorization documents.
- (e) When designated activities require an IPT, it will be comprised of either the PM or FM, a representative from the DOE/HQ and NNSA Program Offices (if applicable), the FR (if applicable), and applicable SMEs, as well as contractor personnel who have the appropriate background and experience in project management, contracting, fiscal, legal, security, ES&H, and other technical areas.
- (f) Formal monthly progress reporting by either the PM or FM will be performed in accordance with the requirements of the applicable AM.
- (g) Formal QPRs on designated activities will be conducted by the applicable AM.
- (h) IPRs will be conducted on designated activities when required by the applicable AM.
- (i) ICRs will be conducted on designated activities when required by the applicable AM.
- (j) Management Reviews will be conducted on designated activities as needed to identify issues and concerns, remove barriers, and to ensure safety and the success of the activity.

- (k) Value Engineering studies tailored to the risk of the designated activity will be conducted to ensure alternative approaches are properly considered when required by the applicable AM.

5. RESPONSIBILITIES.

- a. DOE/HQ and NNSA Program Offices. Provides guidance and establish requirements for conduct of projects, programs, and functions as applicable to their area of responsibility.
- b. Manager. Serves as the delegated Acquisition Executive (AE) for DOE/HQ and NNSA Program Offices' activities as designated, approves FPMs for delegated DOE O 413.3 projects, and PMs/FMs for designated activities. The NNSA/NV ESAAB equivalent board chairs, reviews, and approves CDs and BCC requests as required.
- c. Executive Council. Serves as the NNSA/NV ESAAB equivalent board for delegated DOE O 413.3 projects.
- d. AM for Technical Services (AMTS). Provides the Secretariat for the NNSA/NV ESAAB equivalent board.
- e. Assistant Managers. Establish policies and procedures for the management of designated activities under their purview within six months after issuance of this Order. Categorize activities as DOE O 413.3 projects, and designated activities. Serve as the decision authority on BCC requests for designated activities within their purview.
- f. Division Directors. Recommend activities and managers for DOE O 413.3 projects, and designated activities under their purview.
- g. Federal Project Managers. Manage DOE O 413.3 projects in accordance with this Order.
- h. Program, Project, and Functional Managers. Provide oversight to their designated activities in accordance with this Order.
- i. Integrated Project Teams. Provide multidisciplinary advice to the FPM or PM or FM during the planning and execution of DOE O 413.3 projects and designated activities.

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6. REFERENCE. DOE O 413.3, PROGRAM AND PROJECT MANAGEMENT FOR THE ACQUISITION OF CAPITAL ASSETS, dated 10-13-00.

7. DEFINITIONS.

- a. Acquisition Executive. The individual formally designated to oversee implementation of DOE O 413.3 projects and with responsibility for approving the various phases of the project from inception to closeout. Designation is based on TPC.
- b. Baseline. A quantitative expression of the scope, cost, and schedule criteria for an activity which serves as the basis for measuring performance against the plan.
- c. Baseline Change Control. The process by which requests for changes to an approved baseline are quantified, justified, and approved.
- d. Configuration Management. The formal process by which changes to DOE O 413.3 projects, and designated activities are identified, controlled, and managed through traceable, documented, and dedicated change control practices.
- e. Critical Decision. A defined point in a DOE O 413.3 project which requires formal approval by the designated AE prior to proceeding to the next phase of the project. CD points are defined in DOE O 413.3.
- f. Designated Activities. Designated activities are activities that can be managed using tailored principles and practices from DOE O 413.3, and have a responsible federal individual that controls at least two out of the three facets of project management (cost, scope, and schedule).
- g. DOE O 413.3 Projects. In general, a unique effort which supports a program mission; having defined start and end points; undertaken to create a product, facility, or system; and containing interdependent activities planned to meet a common objective or mission. Project types include planning and execution of construction, renovation, modification, line items for maintenance and repair; environmental restoration, decontamination, and decommissioning efforts; information technology; and large capital equipment or technology

development activities. Tasks which do not include these elements, such as basic research, grants, ordinary repairs, maintenance of facilities, and operations are not considered projects.

- h. Energy Systems Acquisition Advisory Board. A multifunctional body of representatives designated by the AE to provide technical and managerial advice and assistance in regard to CDs and BCC requests for DOE O 413.3 projects.
- i. External Independent Reviews. A review of a DOE O 413.3 project conducted by reviewers outside the NNSA/NV or DOE under the sole purview of OECM and in accordance with DOE O 413.3 requirements.
- j. Federal Project Manager. A federal individual formally designated by the AE as the responsible individual for managing a DOE O 413.3 project.
- k. Functional Manager. Per NV M 111.XA, an FM is an NNSA/NV employee, formally designated by an Office/Division Director, who is assigned the responsibility to monitor the performance of a function(s) that supports multiple NNSA/NV missions/programs/projects. Under this Order, a particular program or project may also be a designated activity. The FM has no responsibility for the contractor's/user's development of cost, scope, or schedule. However, the FM does ensure that assigned functions satisfy defined requirements and are performed in a manner that adequately controls associated risks.
- l. Funding Authorization. An instrument which authorizes the expenditure of funds up to a set limit to accomplish work defined in a work authorization. A work authorization and funding authorization may exist as a single document.
- m. DOE/HQ and NNSA Program Managers. An individual in an organization or activity who is responsible for the management of a specific function or functions, budget formulation, and the execution of the approved budget. The DOE/HQ and NNSA Program Managers receive approved funding from the Office of the Controller identifying program dollars available to accomplish the assigned functions.
- n. DOE/HQ and NNSA Program Offices. The DOE/HQ and NNSA organizational elements responsible for managing a program and overseeing activities conducted by an operations or field office.

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- o. Independent Cost Review. An independent review of a cost estimate to ensure the work of the project can be accomplished within the bounding conditions of the cost estimate.
- p. Independent Project Review. A review of a DOE O 413.3 project or a designated activity by reviewers within the NNSA/NV or DOE/HQ and NNSA in accordance with DOE O 413.3 requirements.
- q. Integrated Project Team. A team led by the FPM or PM or FM and comprised of the FPM or PM or FM, a representative from the DOE/HQ and NNSA Program Offices (if applicable), the FR (if applicable), and SMEs, as well as contractor personnel who have the appropriate background and experience in project management, contracting, fiscal, legal, security, ES&H, and other technical areas.
- r. Management Review. A review of an NNSA/NV designated DOE O 413.3 project or designated activity conducted by any level of NNSA/NV management.
- s. ESAAB Equivalent Process. The formally approved process by which DOE O 413.3 projects under the purview of NNSA/NV are subject to review and approval of CDs and baseline change requests by the Manager as the delegated AE.
- t. Program or Project Manager. Per NV M 111.XA, a PM is an NNSA/NV employee, formally designated by an AM or Office/Division Director, who is assigned program/project management responsibilities for a defined work scope. Under this Order, a particular program or project may also be a designated activity. The PM is the single point of contact for oversight of the work scope and in this role is accountable for ensuring an adequately defined work scope, cost, schedule, and for monitoring contractor performance. The PM is responsible for ensuring adequate planning and organizing, directing, controlling, and reporting of all activities within the assigned scope of work have been accomplished to provide a defined product(s) in a safe manner. PMs may reside in any of the AM organizations. Neither Program Manager nor Project Manager responsibilities can be further delegatable.
- u. Project Execution Plan. A document which summarizes the planning for accomplishment of the project, the key objectives, and the critical information and documentation necessary to manage the project.

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- v. Total Estimated Costs (TEC). Includes all the following estimated costs: land, land rights, depletable resources, and improvements to land; engineering, design, and inspection; construction management of main plant, balance of plant, other facilities, other structures and significant alterations, additions, and improvements to structures (excluding normal maintenance); utilities including water and sewage systems, heating, ventilation, and air conditioning, power systems, communications systems, and fire protection systems; quality assurance; preoperational construction changes to be required during integrated systems testing and hot-start testing; safeguards and securities systems; project and construction management; direct and indirect construction costs; standard and special facilities; all equipment, furniture, and systems contained in main, balance of plant facilities, and administrative areas to render the facility usable; computer systems, if dedicated to the project; contingency and economic escalation; decontamination and/or disposal cost of equipment and construction rubble when the purpose of the project is to replace existing facilities.
 - w. Total Project Costs. Includes all research and development, operating, plant, and capital equipment costs specifically associated with project construction up to the point of routine operations which will include, but not be limited to, TECs and pre-preliminary activities such as Conceptual Design Reports, preliminary Safety Analysis Reports if initiated prior to CD-1, preparation of Project Data Sheets, design criteria, National Environmental Policy Act documentation, and formulation of quality assurance criteria.
8. CONTACT. Questions concerning this Order should be directed to the Office of AMTS at (702) 295-3201.



Kathleen A. Carlson
Manager

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CONTRACTOR REQUIREMENTS DOCUMENT (CRD)

The National Nuclear Security Administration Nevada Operations Office (NNSA/NV) Performance-Based Management, Environmental Management Support, and Security contractors must have Project Management systems which satisfy the following requirements:

NOTE: These requirements were taken from DOE O 413.3. Based on the tailoring found in the *NNSA/DP Program Requirements Manual for Project Management*, this CRD expands the applicability of the DOE O 413.3 CRD. For DOE O 413.3 Projects with a Total Project Cost greater than \$5 million, CRD requirements (1-5) below will be utilized as stated. For General Plant Projects and Designated Activities, refer to Attachment 2, Requirements Applicability Matrix, for tailoring of these requirements.

1. The industry standard for project control systems described in American National Standards Institute/Electronic Industries Alliance-748, *Earned Value Management Systems*, must be implemented on all projects for control of project performance during the project execution phase.
2. Cost and schedule performance, milestone status, and financial status must be reported to NNSA/NV on a monthly basis using NNSA/NV-approved work breakdown structure elements and data elements for all projects, except for time-and-materials contracts, firm fixed-priced contracts, or level-of-effort support contracts, for control of project performance during the project execution phase. The report must also include variance analyses and corrective action plans which integrate cost, schedule, and scope if variances exceed NNSA/NV-established reporting thresholds. Also reported will be analyses of cost and schedule trends, financial status, and Baseline Change Control activity, including the allocation of management reserve, potential problems, and critical issues
3. For project subcontracts which must be accomplished by the Performance-Based Management Contractor (PBMC), the contractor must have a written Acquisition Plan which is appropriate for the requirement and dollar value of each subcontract and consistent with the intent of the Federal Acquisition Regulation. The Acquisition Plan for a project subcontract to be awarded by the PBMC is developed by a team of contractor employees including, as a minimum, the prospective PBMC Project Manager and Contract Negotiator. The Acquisition Plan will also be concurred on by the NNSA/NV Contracting Officer and Federal Project Manager/Program Manager-Project Manager/Functional Manager.

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4. Technical performance analyses and corrective action plans must be reported to NNSA/NV for variances to the project baseline objectives resulting from design reviews, component and system tests, and simulations.
5. An integrated contractor technical, cost, and schedule baseline must be developed and maintained using documented contractor change control. Technical, cost, and schedule data must also be provided, as requested by NNSA/NV programs, for development and change control associated with federal baselines.

NATIONAL NUCLEAR SECURITY ADMINISTRATION NEVADA OPERATIONS OFFICE (NNSA/NV) REQUIREMENTS APPLICABILITY MATRIX

NNSA/NV Category	DOE O 413.3 Projects			Designated Activities	
	"Major Systems"	"Other"	General Plant Project		
Applicable Range in Total Project Cost (TPC) or Annual Cost (AC)	TPC ≥ \$400M	\$5M < TPC < \$400M	TPC ≤ \$5M	AC ≥ \$20M	AC < \$20M
Responsible Individual(s) for Planning and Execution	Federal Project Manager	Federal Project Manager	Federal Project Manager	Project, Program, or Functional Manager	Project, Program, or Functional Manager
Formal Designation of Responsible Individual(s)	By U.S. Department of Energy Headquarters (DOE/HQ) and NNSA Acquisition Executives (AE)	By DOE/HQ and NNSA AEs Unless AE Authority Has Been Delegated to the NNSA/NV Manager	By NNSA/NV Manager	By NNSA/NV Manager	By NNSA/NV Assistant Manager (AM) With Concurrence by NNSA/NV Manager
Formal Qualification of Responsible Individual(s)	Technical Qualification Program (TQP) for either "Project Management"* or TQP for "Construction Management and Engineering"	TQP for either "Project Management"* or TQP for "Construction Management and Engineering"	TQP for either "Project Management"* or TQP for "Construction Management and Engineering"	TQP for "Technical Program Manager" and TQP for the Applicable Functional Area if required	TQP for "Technical Program Manager," and TQP for the Applicable Functional Area if required
Energy Systems Acquisition Advisory Board (ESAAB) Critical Decisions Apply	Yes	Yes	No	No	No
Management Advisory Board	DOE/HQ and NNSA ESAABs	Program Office ESAAB Equivalent or NNSA/NV ESAAB Equivalent	As Defined by Decision Authority	Not Applicable**	Not Applicable**
Decision Authority	DOE/HQ and NNSA AEs	DOE/HQ and NNSA AEs or NNSA/NV Manager as AE	Federal Project Manager	Applicable NNSA/NV AM	Applicable NNSA/NV AM
Establish Formal Performance Baselines	Yes	Yes	Yes	Yes	Yes

*For DOE O 413.3 projects involving Special Nuclear Material, qualification shall be in accordance with the TQP in Project Management.

**No Critical Decisions are involved, and Baseline Change Control is at AM level already.

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NNSA/NV Category	DOE O 413.3 Projects			Designated Activities	
	"Major Systems"	"Other"	General Plant Project		
Formal Configuration Management Applies	Yes	Yes	Yes	Yes	Yes
Applicable Execution Document(s)	Project Execution Plan	Project Execution Plan	Project Execution Plan (Contractor's Plan)	Execution Plan (Contractor's Plan as Applicable)	Execution Plan (Contractor's Plan as Applicable)
Authorizations	Work Authorization and Corresponding Funding Authorization From NNSA/NV AM	Work Authorization and Corresponding Funding Authorization From NNSA/NV AM	Project Authorization and Corresponding Funding Authorization From NNSA/NV AM	Approved Task Plans	Approved Task Plans
Utilize an Integrated Team	Yes	Yes	When Required by Decision Authority	When Required by Decision Authority	When Required by Decision Authority
Formal Monthly Reporting of Progress and Performance	Yes	Yes	Yes	Yes	Yes
Conduct Quarterly Performance Review(s)	Yes	Yes	No*	Yes	Yes
Conduct External Independent Review(s) (EIR) and/or Independent Project Review(s)(IPR)	EIR and IPR	EIR and IPR	When Required by Decision Authority	When Required by Decision Authority	When Required by Decision Authority
Conduct Independent Cost Estimates and/or Independent Cost Review(s)	Yes	Yes	When Required by Decision Authority	When Required by Decision Authority	When Required by Decision Authority
Conduct NNSA/NV Management Review(s)	As Needed	As Needed	As Needed	As Needed	As Needed
Conduct Value Engineering Studies Tailored to the Risk of the Project	Yes	Yes	When Required by Decision Authority	When Required by Decision Authority	When Required by Decision Authority

*General Plant Project quarterly reviews will be conducted as an NNSA/NV Management Review .

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**NATIONAL NUCLEAR SECURITY ADMINISTRATION (NNSA/NV)
NEVADA OPERATIONS OFFICE
ENERGY SYSTEMS ACQUISITION ADVISORY BOARD (ESAAB)
REQUIREMENTS, UNDERSTANDINGS, AND EXPECTATIONS**

FOREWORD

This document reflects the current requirements, understandings, and expectations related to the NNSA/NV ESAAB equivalent process.

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DEFINITIONS

Energy Systems Acquisition Advisory Board. A multifunctional body of representatives designated by the NNSA/NV Acquisition Executive (AE) to provide technical and managerial advice and assistance for Critical Decision (CD) points and Baseline Change Proposals (BCP).

NNSA/NV ESAAB Equivalent. The process by which the NNSA/NV AE reviews and decides on CDs and BCPs for those projects delegated to NNSA/NV by the U.S. Department of Energy Headquarters (DOE/HQ) and NNSA. This is accomplished by using NNSA/NV elements (board) to review the project and provide advice to the AE.

Critical Decision. The CD is an approval given at specific points in a project's life cycle when transitioning from one project phase to another phase (e.g., from conceptual design to preliminary design). The CDs are used as review points to ensure the AE the project is ready to proceed into the next phase and remains a mission need. The five CDs are as follows:

- Approve Mission Need (CD-0)--authorizes conceptual design.
- Approve Preliminary Baseline Range (CD-1)--authorizes preliminary design.
- Approve Performance Baseline (CD-2)--authorizes detailed design.
- Approve Start of Construction or Remedial Action (CD-3)--authorizes start of construction.
- Approve Start of Operations or Project Closeout (CD-4)--authorizes project acceptance and closeout.

Baseline Change Proposal. A BCP is a request made by or presented through the Federal Project Manager (FPM) to make a change to the scope, cost, and/or schedule baselines of a project. The BCP is reviewed at the appropriate change control board level and approved/disapproved by the appropriate Change Control Manager.

NNSA/NV AE. The Operations Office Manager which acts as the AE for the NNSA/NV ESAAB equivalent board process.

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Federal Project Manager. The FPM is the NNSA/NV employee assigned oversight of the project and the principal NNSA/NV interface with the Contractor Project Manager (CPM). The FPM will be responsible and accountable for the Project Management activities of one or more discrete projects under their cognizance and is usually the single point of contact between the government staff and the contractor staff for all matters relating to the project and its execution.

Contractor Project Manager. The CPM is, generally, from the Performance-Based Management Contractor organization, the Architect-Engineer firm, Construction Management firm, or a non-DOE/HQ or non-NNSA federal employee assigned to direct the project. The CPM is responsible and accountable for the day-to-day execution of assigned projects within approved cost, schedule, and scope baselines, as defined in the Project Execution Plan (PEP).

Program Office. The advocate promoting the project, could be DOE/HQ, NNSA, or the Operations Program Office. This is the organization responsible for planning and oversight of the execution of the specific activities and missions which comprise the program.

NNSA/NV ESAAB EQUIVALENT PROCESS

1. **BACKGROUND.** DOE O 413.3, PROGRAM AND PROJECT MANAGEMENT FOR THE ACQUISITION OF CAPITAL ASSETS, requires DOE/HQ and NNSA projects be undertaken in five phases; each preceded by a CD. CD authority resides with the Secretarial AE (SAE), if the project is a major system (equal to or greater than \$400 million); and with the Program Secretarial Officers (PSO), if the project is a nonmajor system (less than \$400 million) acquisition. Additionally, BCPs for major systems and other projects are subject to review and approval by the SAE and/or PSO. ESAABs and ESAAB equivalent boards are to be formulated to assist the CD and Baseline Change Control processes. Selected nonmajor system projects and their associated CDs and BCP actions can be delegated by the PSO to the Manager, NNSA/NV. The Operations Office must establish and implement its own ESAAB equivalent process to service those projects with delegated AE authority. For those projects where AE authority has not been delegated to the Manager, NNSA/NV, the FPM will use the appropriate DOE/HQ and NNSA ESAAB equivalent processes.
2. **PURPOSE.** This document specifies the ESAAB equivalent procedures which will be followed by NNSA/NV for projects and authority delegated by the PSO to the Operations Office.
3. **APPLICABILITY.**
 - a. The NNSA/NV ESAAB equivalent is responsible for advising the NNSA/NV AE on CDs for all delegated and associated BCPs. Projects exempted from the NNSA/NV ESAAB equivalent process are general plant projects, accelerator improvement projects, and capital equipment, facilities and infrastructure projects less than \$5 Million. The AE for the NNSA/NV ESAAB equivalent will make the final decision on the action presented before the board based upon the input from the board members. The board members will act as Subject Matter Experts (SME) in the evaluation of the project proposal, providing to the AE expert analysis, advice, and recommendations with respect to the implications of the CD or BCP being discussed.
 - b. At the request of board members, the NNSA/NV ESAAB equivalent will be supplemented with other disciplines or SMEs to meet the DOE O 413.3 requirements. The NNSA/NV support staff may be asked to participate in

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preliminary review meetings to resolve issues at the appropriate level. NNSA/NV ESAAB equivalent members will advise the AE as to the suitability for the proposed decision or baseline change.

4. GOALS AND OBJECTIVES.

- a. The concept of using ESAABs at CD points in federal projects was developed from the Office of Management and Budget (OMB) Circular A-109, *Major Systems Acquisitions*. The goals and objectives of this procedure accordingly reflect those of OMB Circular A-109.
 - (1) To ensure the NNSA/NV acquisition process reflects an integrated approach to matching program requirements with the project development and execution process.
 - (a) Each acquisition fulfills a mission need and can achieve adequate levels of performance and reliability in its intended operating environment.
 - (b) Planning is built upon this mission need.
 - (c) Competitive design concepts are evaluated, whenever economically beneficial.
 - (d) Appropriate tradeoffs are made between investment costs, ownership costs, schedule, and performance.
 - (e) A project specific acquisition strategy is developed for each acquisition as soon as it is decided to solicit alternative design concepts.
 - (f) Adequate system tests and evaluations are conducted.
 - (g) Performance is assessed against project baselines and these assessments are provided to the AE at CD points.
 - (2) To provide appropriate AE oversight to the acquisition process for projects greater than \$5 million.

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- (3) To ensure line management involvement and accountability for project performance.
 - (4) To demonstrate commitment to improving the acquisition process to departmental and congressional elements.
 - b. The NNSA/NV ESAAB equivalent process also provides a vehicle by which NNSA/NV management can reinforce departmental policy, make necessary course corrections, and verify all organizational elements are working towards the same goal.
5. ROLES AND RESPONSIBILITIES. The following are NNSA/NV ESAAB equivalent participants' functions:
- a. Acquisition Executive.
 - (1) Presides over NNSA/NV ESAAB equivalent meetings.
 - (2) Makes decisions on disposition of all requested CDs and BCPs.
 - (3) Assigns action items which may result from meeting discussions.
 - (4) Ensures board members fulfill their responsibility.
 - (5) Reviews corrective action plan (CAP) reports on assigned project action items.
 - b. Board Members.
 - (1) Provide timely review of project materials.
 - (2) Fully evaluate project in their own area of expertise.
 - (3) Prepare directed questions/comments on specific project items which need resolution to the Project Team, coordinating with the board Secretariat.
 - (4) Work to resolve issues with Project Team.

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- (5) Attend all NNSA/NV ESAAB equivalent meetings or provides an alternate.
- (6) Provide recommendation of disposition to the AE.
- (7) NNSA/NV ESAAB equivalent board members will act as SMEs in the evaluation of the proposed CD or BCP to:
 - (a) Ensure Defense Programs (DP) and Environmental Management (EM) requirements are met and common construction/business practices are followed.
 - (b) Provide effective recommendations and advice to the AE.

c. Program Office.

- (1) Works with the FPM to prepare project and materials for presentation to board.
- (2) Coordinates with the FPM and NNSA/NV ESAAB equivalent Secretariat to schedule meetings.
- (3) Works with the FPM to answer inquiries/resolve issues with board members.
- (4) Coordinates the decision memorandum with the ESAAB equivalent Secretariat to capture action items and/or issues resulting from the review.
- (5) When the FPM is not available, presents proposed CD or BCP to board.
- (6) The Program Office Representative, as part of the Project Team, coordinates with the FPM and NNSA/NV ESAAB equivalent Secretariat to manage the project through the NNSA/NV ESAAB equivalent process.

d. Federal Project Manager.

- (1) Coordinates preparation of project documents supporting the decisions process.

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- (2) Coordinates with the Program Office and NNSA/NV ESAAB equivalent Secretariat to schedule board meeting.
- (3) Prepares NNSA/NV ESAAB equivalent presentation.
- (4) Presents proposed change to the board.
- (5) Works with the Program Office to respond to NNSA/NV ESAAB equivalent questions/requests and resolves issues.
- (6) Prepares the decision memorandum for AE signature.
- (7) The FPM, as part of the Project Team, will prepare the project decision packages, coordinate project responses to board members' comments/questions, and present the information to the AE and the board for consideration.

e. ESAAB Equivalent Secretariat.

- (1) Coordinates NNSA/NV ESAAB equivalent schedules for the AE.
- (2) Keeps the Office of Engineering and Construction Management (OECM) and the DOE/HQ and NNSA ESAAB equivalents informed (through the DOE/HQ and NNSA Program Offices) on schedule and status.
- (3) Offers improvements/suggestions on project planning and process to the AE, Program Office, and Project Team.
- (4) Provides written comments on significant project issues to the AE, Program Office, and Project Team.
- (5) Advises AE on the technical and management significance of issues identified from NNSA/NV ESAAB equivalent and quarterly reviews.
- (6) Provides technical reviews and comments on the planning and execution of construction projects.
- (7) Develops lines of inquiry for use at the NNSA/NV ESAAB equivalent meeting.

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- (8) Records minutes and action items resulting from the AE reviews.
 - (9) Coordinates the decision memorandum process so:
 - (a) Decisions are appropriately documented.
 - (b) Action items/issues are captured and included in the decision memorandum package.
 - (c) The memorandum is properly distributed to the Project Managers, board members, and involved Program Offices.
 - (10) Maintains database/library of NNSA/NV ESAAB equivalent board meetings and actions for all projects.
 - (11) Works with the FPM, Program Office, and NNSA/NV ESAAB equivalent board members to facilitate review process, arranges meetings, and tracks issues to resolution.
 - (12) Works with all parties to improve the NNSA/NV ESAAB equivalent board process.
 - (13) Monitors/validates procedures and processes from NNSA/NV ESAAB equivalent board.
 - (14) The Secretariat will coordinate the meetings, participate in the NNSA/NV ESAAB equivalent process, advise the AE or alternate on the issues of the project, and assist the AE in disseminating information to and from the meeting.
6. **BOARD MEMBERS.** The following table shows the current membership of the NNSA/NV ESAAB equivalent which will review and/or approve CDs and BCPs for all delegated projects.

Role/Area of Inquiry	Principal Board Member	Alternate Board Members
Chair	Operations Office Manager	Deputy Manager
Legal	Chief Counsel	Counsel

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Role/Area of Inquiry	Principal Board Member	Alternate Board Members
Budget and Resource Management	Chief Financial Officer	Designated Alternate
Environmental Safety, Health, and Security	AM for Technical Services (AMTS)	Deputy AMTS
Defense Programs	AM for National Security (AMNS)	Deputy AMNS
Environmental Management	AM for Environmental Management (AMEM)	Deputy AMEM
Other support as required*	Other specialized support as required	Designated Alternate

ESAAB Equivalent Secretariat		
Project Management	Director, Engineering and Asset Management Division (EAMD)	Designated Alternate

NOTE: The board membership, Secretariat, and DOE/HQ and NNSA coordination will vary and be established based on the type of project being presented. The role/area of inquiry identified with an "*" are not board members.

7. ESAAB EQUIVALENT PROCESS. See Appendix A for a graphical representation of the NNSA/NV ESAAB equivalent process and Appendix B for the NNSA/NV ESAAB equivalent process time line.

a. Scheduling.

- (1) The FPM in cooperation with the program will request an NNSA/NV ESAAB equivalent meeting for approval of a CD or BCP. This ESAAB equivalent meeting request will be sent to the NNSA/NV Secretariat with copies to NA-54 and EM-6 and the respective DOE/HQ, NNSA, or Operations Office Program.
- (2) Once a request is received, the NNSA/NV Secretariat will coordinate with the AE and board members for the NNSA/NV ESAAB equivalent meeting and notify the FPM and Program Office of the specific date. The

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Secretariat will maintain an ESAAB schedule which will be updated regularly. The ESAAB equivalent activity will follow the process flowchart and time lines as shown in the appendices.

- b. Review and Comment Resolution. The major facet of the NNSA/NV ESAAB equivalent process is the review and comment resolution phase. In this phase the ESAAB equivalent board members evaluate the project request and formulate their comments, issues, and recommendations. **NOTE:** The goal of this phase is to resolve all comments and issues prior to the formal NNSA/NV ESAAB equivalent meeting with the AE.
 - (1) The FPMs, in cooperation with the advocate program, will supply appropriate project documents and materials to the NNSA/NV Secretariat for distribution to the board members. The materials provided will be the requested action documents (i.e., CD request or BCP), results from any external and/or internal reviews since the last NNSA/NV ESAAB equivalent meeting, CAPs, and other materials which support the proposed decision or BCP. Appendix C contains listings of required documents and comprehensive outlines of suggested topics/lines of inquiry for each CD.
 - (2) The board members will examine the project through the provided materials and provide directed questions/comments to the FPM and program. Board members' evaluations should identify project inadequacies, emphasizing in the comments:
 - (a) Those items to be corrected which are proven to ensure probability of project success.
 - (b) Conclusion on whether the inadequacy of project preparations is of sufficient impact that the project cannot proceed.
 - (c) Document reasons for any critical comment and attempt an evaluation of the cost impact of instituting recommendation which address comments.
 - (d) Formulate "tradeoffs" on alternative methods for attaining project success.

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- (3) A telephone conference call or video conference review meeting will be held with the FPM, the other Project Team members in the field, Program Office, board staff, and the Secretariat, to review the project, discuss the comments/questions of the board members, and set a schedule for resolving the outstanding issues/requirements.
 - (4) After the review meeting, the FPM and Program Manager will work with the board members and their staffs to answer inquiries and resolve issues prior to the formal NNSA/NV ESAAB equivalent meeting. If necessary, additional telephone and/or video conferences will be held to resolve outstanding comments/issues.
- c. Prebriefings. Prebriefings are optional. The purpose of the prebrief is to have a final “run through” with the board members and/or staff, to present the project status and issues, and obtain feedback on the presentation prior to proceeding with the scheduled NNSA/NV ESAAB equivalent meeting. The Secretariat will establish prebrief and NNSA/NV ESAAB equivalent meeting dates in coordination with board members, program, and project staff.
- d. ESAAB Equivalent Board Meetings.
 - (1) After the review and comment phase has been completed, the FPM and Program Manager will confirm their intent to continue with the NNSA/NV ESAAB equivalent meeting with the Secretariat. The Secretariat will make final meeting preparations, distribute the project presentation to the board members, and coordinate the preparation of a decision memorandum.
 - (2) The decision memorandum, see Appendix C for example, will be prepared by the FPM and Program Manager prior to the meeting and provided to the Secretariat for use at the NNSA/NV ESAAB equivalent meeting. This memorandum will:
 - (a) Describe the decision requested.
 - (b) Capture action items and/or issues resulting from the NNSA/NV ESAAB equivalent review.
 - (c) Incorporate approval and disapproval spaces for use by the AE.

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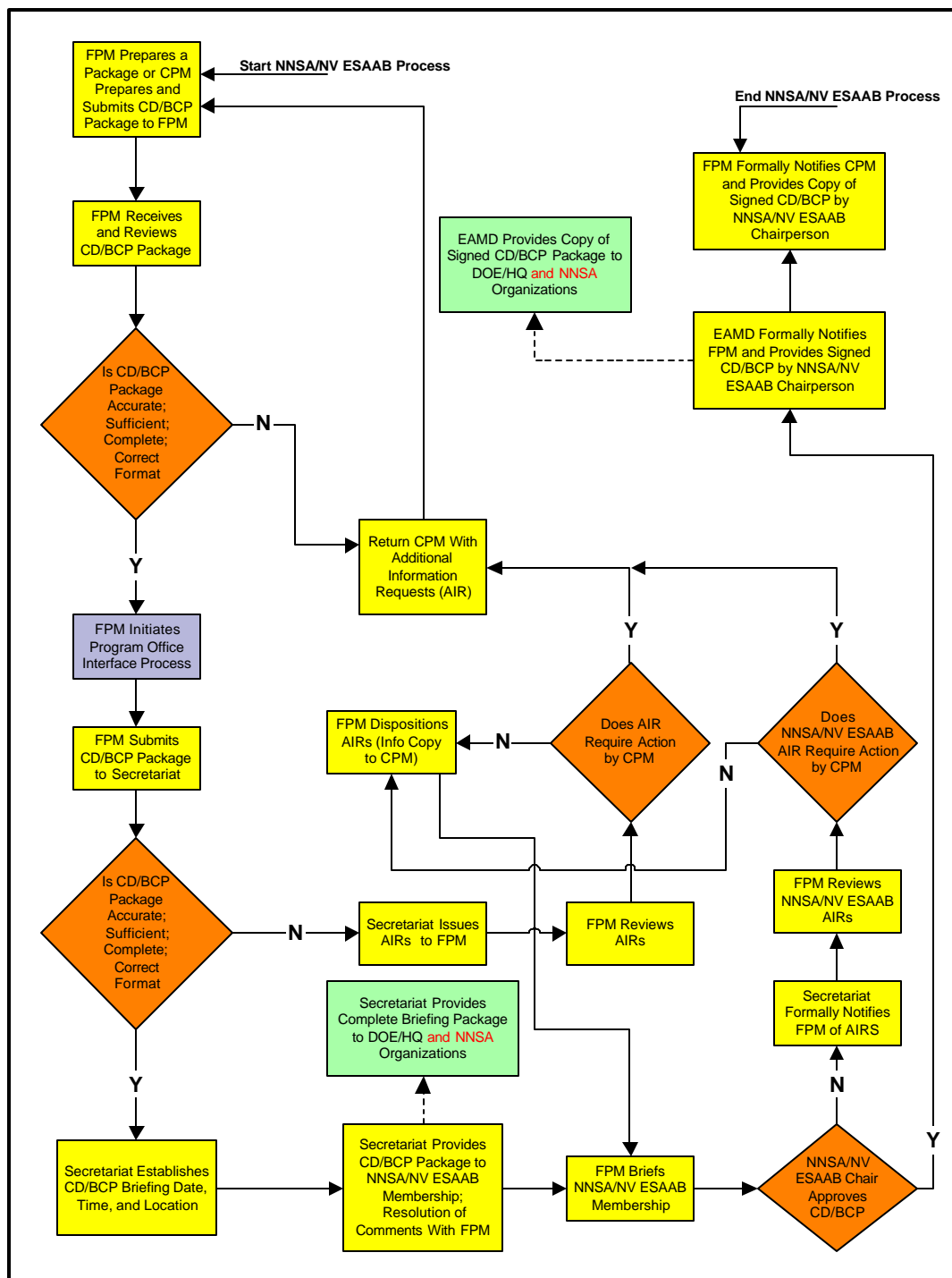
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- (3) The NNSA/NV Secretariat will work with the FPM to ensure the decision memorandum package is complete and obtain board member concurrences prior to the final meeting.
- (4) At the formal meeting, the FPM will present the project before the NNSA/NV ESAAB equivalent. The presentation should be brief and emphasize the review steps which were taken, comment/issue resolution, and the decision which is being requested of the AE. (See Appendix D for outline of NNSA/NV ESAAB equivalent presentation.) Any unresolved issue which requires action by the AE should be presented at this time. Agreement to present unresolved issues to the AE will be a joint decision between the FPM, Program Manager, and the board members.
- (5) At the conclusion of the presentation, board members will be asked to state their endorsement of the decision (if they have not done so), and the decision memorandum will be offered to the AE for signature. The decision memorandum will incorporate approval or disapproval, and action items and/or issues which result from the NNSA/NV ESAAB equivalent review, as appropriate. Signed copies of the decision memorandum will be provided to the FPM, Program Manager, NNSA/NV ESAAB equivalent members, DOE/HQ and NNSA Program Managers, DOE/HQ and NNSA ESAAB equivalent Secretariats and involved offices within a week of signatures.
- (6) Significant changes to the decision memorandum, if required, will be made by the Secretariat and Project Team, and offered to the AE for signature within one week of the NNSA/NV ESAAB equivalent meeting.
- (7) The proceedings of the meeting will be mechanically recorded by the Secretariat. Copies of the minutes, including the action items identified, will be distributed to FPM, program, board members and interested offices, within two weeks of the meeting.

APPENDIX A**NNSA/NV ESAAB EQUIVALENT PROCESS FLOWCHART
FOR CD AND BCP ACTIONS**

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APPENDIX B

ESAAB EQUIVALENT PROCESS TIME LINE

ACTIVITY	TIME REQUIRED
CPM prepares and submits NNSA/NV ESAAB package Process begins with submission	START
FPM assists in preparation; receives and reviews package*	1 week*
Coordinate with Program Office*	1 week*
Secretariat receives and reviews package*	2 days*
Secretariat provides review package to NNSA/NV ESAAB board and coordinates issues with FPM/CPM*	2 weeks*
Secretariat establishes expedited reviews which are in addition to the regular schedule	2 days
Package to DOE/HQ and NNSA OECM, NA-54, and EM-6 (as required)*	3 weeks*
FPM Brief to NV ESAAB	1 day
Board approves/rejects package YES: Secretariat provides signed package to FPM NO: FPM/Secretariat reviews corrective actions and returns to CPM for reprocessing/restart*	2 days 1 week*
FPM notifies CPM to proceed*	2 days*

*These activities and associated time requirements can be conducted concurrently with other actions.

APPENDIX CCD INFORMATION OUTLINES

Environmental Restoration (ER) and Facility Disposition projects are driven by regulatory requirements in the Comprehensive Environmental Response, Compensation, and Liability Act or the Resource Conservation and Recovery Act. Therefore, the phases of these projects are not exactly the same as the traditional construction project. The following CDs are associated with these projects; however, because of statutory time limits, potential fines, extensive documentation requirements, and the nature of the CDs, the AE, subject to the approval of the PSO, and notification to OECM, may decide not to require an ESAAB meeting. The CD/BCP will be disposed and documented by the AE in a decision memorandum.

1. CD-0--APPROVE MISSION NEED.¹

- a. Required Information. The following is the list of CD prerequisites from the DOE O 413.3 and the EM Program Office:

- (1) Justification of mission need.
- (2) Acquisition strategy.
- (3) Results of independent review (for major systems project or when requested for other projects).
- (4) EM Project Definition Rating Index (PDRI) self-assessment for EM projects only.

b. Suggested Project Preparation Topics for CDs.

- (1) The following list provides a general outline for construction scope, cost, schedule, management, and other project-related topics a project requesting CD-0 typically will have investigated prior to the decision. As part of the project development process, field and Project Team members

¹ For ER projects, CD-0 and CD-1 are combined. CD-0/1 is Mission Need/Proposed Work Plan.

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document results from the investigation of these topics. The depth and breadth of the effort in addressing these project development topics would be scaled, based upon the cost, complexity, and risks of the project. For example, not all projects will be required to follow the formal Safety Analysis Report (SAR) process, but all projects will perform a Hazard Analysis (HA).

- (2) This list is offered as an aid in preparing for a CD-0. DOE/HQ and NNSA project lessons learned and Project Management studies have shown “projects fail not because they planned to fail, but because they have failed to plan.” The listing is an attempt to capture the important issues/topics which typically have caused DP project problems in the past. **NOTE:** The following lists of topics will be merged with the list of recommended review topics/lines of inquiry in the Independent Project Review (IPR) Plan:

(a) Statement of Mission Need.

- 1 Define specific need of program.
- 2 Relate need to DOE/HQ, NNSA, and DP/EM Strategic Plans.
- 3 Identify how the project supports the mission.
- 4 Mission need date for project.
- 5 Impact of not meeting mission need date.
- 6 Impact of CD-0 delay.
- 7 Identification and support of mission advocate.

(b) Brief Description.

- 1 Location (site selection decision required).
- 2 Purpose and function.
- 3 Features.

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4 Long-term goals.

(c) Minimum Technical/Functional Requirements.

- 1 Technical performance objectives and interfaces.
- 2 If nuclear facility, reviewed and selected appropriate U.S. Nuclear Regulatory Commission (NRC) standards.
- 3 Feasibility of meeting objectives.
- 4 Research and Development (R&D) required. How funded? R&D plan costs, program support/schedule of deliverables for design.
- 5 Availability of special systems/equipment.
- 6 Integration with other project activities.
- 7 Quality Assurance (QA) planning.
- 8 Demonstrate linkage between requirements and mission.
- 9 Facility Design Description (FDD) completed.
- 10 Systems engineering planning.

(d) Acquisition Strategy.

- 1 Acquisition decision process.
- 2 Acquisition alternatives being considered (i.e., design-bid-build, design-build, lease back).
- 3 Factors for determining decision.
- 4 Strategy to obtain and use Project Engineering and Design (PED) funding/incremental funding or other funding profiles.

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- 5 Survey of public and private sector to determine current state-of-the-art project delivery systems and selection of benchmarks of similar projects in DOE/HQ and NNSA and private industry/lessons learned.
 - 6 Make-buy decision process.
 - 7 Define and evaluate feasibility of alternatives of facility/system being proposed.
 - 8 Tri-lab agreement placement/site priority.
- (e) Resource Capability.
- 1 Identification capabilities required.
 - 2 Capabilities of site personnel in these technologies to support project strategy to obtain necessary project capabilities.
- (f) Risks.
- 1 Preliminary risk assessment.
 - 2 Basis for risk assessment.
 - 3 Mitigation strategies.
- (g) Preliminary Security Planning.
- 1 Planned security assessments funding.
 - 2 Functional requirements for security defined.
 - 3 Preliminary security determination from review of Site Safeguards and Security Plan.
 - 4 Plan for addressing security in design.

(h) Preliminary Environmental Strategy.

- 1 Expected National Environmental Policy Act (NEPA) strategy.
- 2 Pollution prevention issues.
- 3 Waste minimization issues.
- 4 Other expected environmental issues.
- 5 Local outreach strategy.

(i) Preliminary Safety Determination.

- 1 Define safety objectives and constraints.
- 2 Identification of major hazards/functional requirements for safety defined.
- 3 Integrated Safety Management strategy/process flow diagram.

(j) Proposed Cost and Schedule.

- 1 Fiscal year funding start.
- 2 Expected design duration.
- 3 Expected construction duration.
- 4 Critical milestones.
- 5 Cost range for project, Total Estimated Cost (TEC), and Total Project Cost (TPC).
- 6 Preliminary funding profile.
- 7 Mortgage analysis (capital and operating). Does this reasonably fit in DP/EM budget out years?

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8 Facility operating costs. Can DP/EM budget support operating costs?

9 Preliminary CD-1 and CD-2 request dates versus budget cycle milestones.

(k) Preliminary Legal Strategy.

1 Preliminary determination on make-buy decisions.

2 Preliminary review of local agreements.

3 Preliminary NEPA and permitting strategy.

(l) Organizational interfaces.

(m) Involvement of Related Agencies.

1 Strategy for developing internal agency agreements.

2 State and regulatory agency agreements.

3 Strategy for cooperation/collaboration with agencies.

(n) Conceptual Planning/Acquisition.

1 Cost.

2 Congressional notification/approval required (Conceptual Design Report (CDR) cost greater than \$3 million).

3 Schedule/duration.

4 Budget planning requirements.

5 Who will do CDR?

6 How will it be acquired/accomplished?

7 Additional R&D and/or planning required prior to CD-1.

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- 8 Option to be developed.
 - 9 Total operating (operational exercise) prior to Title I start.
 - 10 Source of conceptual phase funding.
- (o) Project Management (Federal Acquisition Team).
 - 1 Members, organized charter, roles and responsibilities of each.
 - 2 Program Manager. Names.
 - 3 Project Manager/Contracting Officer Technical Representative (COTR) relationship.
 - 4 Safety.
 - 5 Environment and health.
 - 6 Legal.
 - 7 Contracts.
 - 8 Public outreach.
 - 9 Maintenance and operations.
 - 10 Contracting Officer.
 - 11 Copy of proposed Project Manager resume and history.
- (p) Project inclusion in management and operating performance award.
- (q) Identify all assumptions.
- (r) Identify Similar Successful and Unsuccessful.
 - 1 Project on site and other sites for future.
 - 2 Benchmarking and lesson learned identification.

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2. CD-1--APPROVE PRELIMINARY BASELINE RANGE.^{2, 3}

- a. Required Information. The following is the List of CD prerequisites from the DOE O 413.3 and the EM Program Office. This list is subject to change and will be updated when there are changes to the Order:
 - (1) Acquisition Plan.
 - (2) Conceptual Design Report.
 - (3) Preliminary CD and baseline range.
 - (4) Preliminary HA.
 - (5) Project Data Sheet (PDS).
 - (6) EM PDRI self-assessment for EM projects only.
- b. Suggested Project Preparation Topics for CDs.
 - (1) The following list provides a general outline for construction scope, cost, schedule, management, and other project-related topics a project requesting CD-1 typically will have investigated prior to the decision. As part of the project development process, field and Project Team members document results from the investigation of these topics. The depth and breadth of the effort in addressing these project development topics would be scaled, based upon the cost, complexity, and risks of the project. For example, not all projects will be required to follow the formal SAR process, but all projects will perform an HA.
 - (2) This list is offered as an aid in preparing for a CD-1. DOE/HQ and NNSA project lessons learned and Project Management studies have shown "projects fail not because they planned to fail, but because they have

² For ER projects, CD-0 and CD-1 are combined. CD-0/1 is Mission Need/Proposed Work Plan.

³ For Facility Disposition projects, CD-1 and CD-2 are combined. CD-1/2 is Conceptual/Preliminary Design.

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failed to plan.” The listing is an attempt to capture the important issues/topics which typically have caused DP project problems in the past. **NOTE:** The following lists of topics will be merged with the list of recommended review topics/lines of inquiry in the IPR Plan:

(a) Statement of Mission Need--Validation of Currency.

- 1 Define specific need of program.
- 2 Relate need to DOE/HQ, NNSA, and DP/EM Strategic Plans.
- 3 Identify how the project supports the mission.
- 4 Mission need date for project.
- 5 Impact of not meeting date.

(b) Brief Description.

- 1 Location (site selection decision approved).
- 2 Purpose and function.
- 3 Features.
- 4 Long-term goals.
- 5 Plan to overcome past site project development/execution problems.

(c) Technical/Functional Requirements.

- 1 Treatment of technical performance objectives and interface in conceptual design.
- 2 If nuclear facility, reviewed and selected appropriate NRC standards.
- 3 Feasibility of meeting objectives.

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- 4 R&D funding in place, integrated in project schedules/completed identification deliverables for design.
- 5 Availability of special systems/equipment.
- 6 Reliability of systems as related to facility usability.
- 7 Integration with other project activities.
- 8 Title I design control strategies.
- 9 Configuration Management Plan and implementation process.
- 10 Plan for incorporation of lessons learned from similar projects.
- 11 Implementation of QA Plan.
- 12 Compare to 6 percent design benchmark used by the U.S. Department of Defense.
- 13 Impact of CD delay.
- 14 Compare to General Service Administration space guidance.

(d) Acquisition Strategy.

- 1 Assessment of Alternatives. Definition and evaluation, including life cycle cost.
- 2 Results of survey to determine current state-of-the-art for project.
- 3 Results of benchmarking of similar projects.
- 4 PED funding Execution Plan.
- 5 Request for Quote/Request for Proposal (RFP)/contracting strategy (design-build versus design-bid-build decision analysis versus Construction Management process).
- 6 Preliminary Acquisition Plan.

(e) Resource Capability.

- 1 Assessment of site/project and Program Team personnel capabilities in project specific technologies.
- 2 Plans to obtain necessary project capabilities.

(f) Risks.

- 1 Risk assessment.
- 2 Basis for risk assessment.
- 3 Mitigation strategies.
- 4 Contingency analysis.

(g) Cost and Schedule.

- 1 Preliminary TEC and TPC.
- 2 Detailed cost estimate.
- 3 Funding profile.
- 4 Mortgage analysis (capital and operating).
- 5 Facility operating costs.
- 6 Fiscal year funding start.
- 7 Preliminary project schedule including critical path analysis.
- 8 Project milestones.

(h) Project Management.

- 1 Approved preliminary CD.

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- 2 PDS (construction PDS for PED funding to be approved, TEC/TPC range number).
 - 3 Assignment of COTR responsibility.
 - 4 Federal Project Acquisition Team Status (Part of PEP).
 - a Program Manager.
 - b Project Manager.
 - c Safety.
 - d Environment and health.
 - e Legal.
 - f Contracting Officer.
 - g Public outreach.
 - h Maintenance.
 - i Operations.
 - 5 Identify past reviews to date.
 - 6 Is the External Independent Review (EIR) complete or was a favorable internal nonadvocate review completed and the EIR scheduled?
 - 7 Status of CAP items.
- (i) Environmental.
- 1 Preliminary NEPA assessment/status/issues.
 - 2 Permitting requirements.
 - 3 Pollution Prevention Plans.

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- 4 Waste Minimization Plans.
- 5 Other expected environmental issues.
- 6 Local outreach input/results.
- 7 Energy Conservation Report submitted.

(k) Safety.

- 1 Identify facility processes.
- 2 Preliminary HA.
- 3 Hazard categorization.
- 4 Safety function definitions.
- 5 Initial selection of safety class systems.
- 6 Facility Design Descriptions.
- 7 System Design Descriptions (SDD).
- 8 Facility siting determination.
- 9 Preliminary SAR draft.
- 10 Criteria for design-in safety.
- 11 Hazardous material inventory and characterization.
- 12 Preliminary defense in depth.

(l) Security.

- 1 Security determination from review of Site Safeguards and Security Plan.
- 2 Completed security assessments.

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(m) Legal.

- 1 Determination on contracting strategy.
- 2 Local agreements review results.
- 3 Preliminary NEPA assessment.
- 4 Permitting requirements.

(n) Organizational interfaces.

(o) Involvement of Related Agencies--Schedule Integration of Stakeholders (Defense Nuclear Facilities Safety Board (DNFSB), NEPA, etc.).

- 1 State and regulatory agency agreements.
- 2 Cooperation/collaboration agreements with agencies.
- 3 Internal agreements documented and in place.

(p) Report of Lessons Learned and Benchmark Addressed by Project Team. Identify all assumptions.

3. CD-2--APPROVE PERFORMANCE BASELINE.^{4, 5}

- a. Required Information. The following is the List of CD prerequisites from the DOE O 413.3 and the EM Program Office. This list is subject to change and will be updated when there are changes to the Order.

- (1) Final PEP and performance baseline.

⁴ For ER projects, CD-2 and CD-3 are combined. CD-2/3 is Performance Baseline/Start Remedial Action.

⁵ For Facility Disposition projects, CD-1 and CD-2 are combined. CD-1/2 is Conceptual/Preliminary Design.

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- (2) Preliminary SAR.
- (3) NEPA documentation.
- (4) Project Data Sheet.
- (5) Verification of mission need and baseline by EIR.
- (6) Independent Cost Review (ICR).
- (7) EM PDRI self-assessment for EM projects only.

b. Suggested Project Preparation Topics for CDs.

- (1) The following list provides a general outline for construction scope, cost, schedule, management, and other project-related topics a project requesting CD-2 typically will have investigated prior to the decision. As part of the project development process, field and Project Team members document results from the investigation of these topics. The depth and breadth of the effort in addressing these project development topics would be scaled, based upon the cost, complexity, and risks of the project. For example, not all projects will be required to follow the formal SAR process, but all projects will perform an HA.
- (2) This list is offered as an aid in preparing for a CD-2. DOE/HQ and NNSA project lessons learned and Project Management studies have shown "projects fail not because they planned to fail, but because they have failed to plan." The listing is an attempt to capture the important issues/topics which typically have caused DP project problems in the past. **NOTE:** The following lists of topics will be merged with the list of recommended review topics/lines of inquiry in the IPR Plan:

(a) Statement of Mission Need.

- 1 Affirm mission need of program.
- 2 Mission need date for project.
- 3 Impact of not meeting date.

4 Construction schedule for meeting date.

(b) Brief Description.

1 Location.

2 Purpose and function.

3 Features.

4 Long-term goals.

5 System Design Descriptions.

(c) Technical/Functional Requirements.

1 Results of Title I design review.

2 If nuclear facility, have NRC standards been appropriately addressed in Title I?

3 Incorporation of technical performance objectives and interfaces in design.

4 Value Engineering results and incorporation of design.

5 Availability of special systems/equipment.

6 Reliability of systems as relates to facility usability.

7 Integration with other project activities.

8 Design control process.

9 Completed design criteria.

10 Confirm lessons learned incorporated into design.

11 Confirm quality included in design.

12 Value Engineering results.

13 System Design Descriptions.

(d) Acquisition Strategy.

1 Long lead/special equipment procurement strategies/plans/ contracts.

2 RFP/contracting strategy for construction.

3 Updated Acquisition Plan.

4 RFP approval along with CD-3 request for design build.

5 Assessment of pre-CD-2 performance.

6 Impact of CD delay.

(e) Risks.

1 Risk Assessment. Update.

2 Basis for risk assessment.

3 Mitigation Strategies. Update.

4 Contingency Analysis. Revised.

(f) Cost and Schedule.

1 Performance baseline detailed cost estimate, TEC, and TPC.

2 Updated funding profile and mortgage analysis (capital and operating).

3 Facility operating costs analysis.

4 Performance baseline project schedule including critical path analysis.

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5 Project milestones.

(g) Project Management.

1 Approved updated CD.

2 Updated PDS.

3 Results of external and nonadvocate reviews.

4 Results of ICR.

5 Federal Project Acquisition Team (Part of PEP).

a Program Manager.

b Project Manager.

c Safety.

d Environment and health.

e Legal.

f Contracts.

g Public outreach.

h Maintenance.

i Operations.

6 Status of CAP items.

(h) Environmental.

1 Final NEPA determination.

2 Permitting arrangements.

- 3 Pollution prevention ideas incorporated into design.
- 4 Waste minimization ideas incorporated into design.
- 5 Local outreach input/results.
- 6 Identify waste sites incorporated in design.

(i) Safety.

- 1 Primary SAR, Chapters 1-4.
- 2 Process HA.
- 3 Safety Structure, System, and Component (SSC) functional requirements.
- 4 FDD, Chapters 1-3.
- 5 SDD, Chapters 1-3.
- 6 Criteria for designed in safety.
- 7 Defense in depth and worker protection design criteria.
- 8 Preliminary technical safety requirements.

(j) Security.

- 1 Security determination from review of Site Safeguards and Security Plan/security assessments.
- 2 Incorporation of specific security design criteria security assessment form.

(k) Legal.

- 1 Contracting strategy.
- 2 NEPA determination.

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3 Permitting arrangements.

(l) Organizational interfaces.

(m) Involvement of Related Agencies--Revised Schedule for Stakeholders Interface.

1 State and regulatory agency agreements.

2 Cooperation/collaboration agreements with agencies.

3 Internal Memorandums of Understanding in place.

4 Look at CD-0 comments.

5 Identify all assumptions.

4. CD-3--APPROVE START OF CONSTRUCTION OR REMEDIAL ACTION.^{6, 7}

a. Required Information. The following is the List of CD prerequisites from the DOE O 413.3 and the EM Program Office. This list is subject to change and will be updated when there are changes to the Order.

(1) Approved preliminary SAR and DOE/HQ or NNSA Safety Evaluation Report (SER) issued.

(2) Updated PEP and performance baseline.

(3) Results from an execution readiness EIR for major systems.

(4) Projects or results from IPRs for other projects.

(5) Project Data Sheet.

⁶ For ER projects, CD-2 and CD-3 are combined. CD-2/3 is Performance Baseline/Start Remedial Action.

⁷ For Facility Disposition projects, CD-3 is End of Design/Start of Demolition and Disposal.

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(6) EM PDRI self-assessment for EM projects only.

b. Suggested Project Preparation Topics for CDs.

- (1) The following list provides a general outline for construction scope, cost, schedule, management, and other project-related topics a project requesting typically will have investigated prior to the decision. As part of the project development process, field and Project Team members document results from the investigation of these topics. The depth and breadth of the effort in addressing these project development topics would be scaled, based upon the cost, complexity, and risks of the project. For example, not all projects will be required to follow the formal SAR process, but all projects will perform an HA.
- (2) This list is offered as an aid in preparing for a CD-3. DOE/HQ and NNSA project lessons learned and Project Management studies have shown "projects fail not because they planned to fail, but because they have failed to plan." The listing is an attempt to capture the important issues/topics which typically have caused DP project problems in the past. **NOTE:** The following lists of topics will be merged with the list of recommended review topics/lines of inquiry in the IPR Plan:

(a) Statement of Mission Need.

- 1 Affirm mission need of program.
- 2 Mission need date for project.
- 3 Construction schedule for meeting date.

(b) Brief Description.

- 1 Location.
- 2 Purpose and function.
- 3 Features.
- 4 Long-term goals.

5 Final Design Plans.

(c) Technical/Functional Requirements.

1 Results of Title II design review.

2 Incorporation of technical performance objectives and interfaces in design assurance.

3 If nuclear facility, have appropriate NRC standards been incorporated in Title II design?

4 Assurance of compliance with codes and standards/QA review results.

5 Systems' designs as relates to facility reliability/usability.

6 Integration with other project activities.

7 Configuration management process operating.

8 Confirm quality incorporated in design.

(d) Acquisition Strategy.

1 Long lead/special equipment procurement status.

2 RFP/Contracting Strategy for Construction. Design build combine with CD-2.

3 Final Acquisition Plan.

4 United States vendor participation/completed all foreign ownership determinations.

5 Assessment of pre-CD-3 performance.

6 Impact of CD delay.

(e) Risks.

- 1 Updated risk assessment.
- 2 Mitigation strategies.
- 3 Contingency status.

(f) Cost and Schedule.

- 1 Cost and schedule status of design effort, including earned value analysis.
- 2 Updated performance baseline detailed cost estimate, TEC, and TPC.
- 3 Updated funding profile and mortgage analysis (capital and operating).
- 4 Facility operating costs.
- 5 Updated performance baseline detailed project schedule (resource loaded with critical path analysis).
- 6 Project milestones.
- 7 Project control systems in place and operating.
- 8 Review of CD-2 comments.

(g) Project Management.

- 1 Approved final CD.
- 2 Updated PDS.
- 3 Project controls, scheduling, configuration management, reporting, and change control procedures.
- 4 Project Completion Plan Approved. Transition Plan and budget.

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5 Out-Year Operating Funds Included in Planning Budgets.
Operation, maintenance, and security.

6 Federal Project Acquisition Team (Part of PEP).

a Program Manager.

b Project Manager.

c Safety.

d Environment and health.

e Legal.

f Contracts.

g Public outreach.

h Maintenance.

i Operations.

7 Status of CAP items.

8 Identify past reviews to date.

(h) Environmental

1 Final NEPA determination approved.

2 Permitting arrangements complete.

3 Pollution prevention ideas incorporated into design.

4 Waste minimization ideas incorporated into design.

5 Local outreach input/results.

(i) Safety.

- 1 Accident analysis.
- 2 Safety class SSCs performance requirement.
- 3 Preliminary SAR complete.
- 4 FDD complete.
- 5 SDD, Chapters 1-4.
- 6 Environment, safety, and health (ES&H) integration in project execution.
- 7 Safety orders and regulations compliance ensured.
- 8 Formal SAR Execution Plan. Start.
- 9 Occupational Safety and Health Administration (OSHA) Safety Plan in place.
- 10 Completed hazard identification and evaluations.
- 11 Specifications of Preventive and Mitigative Safety. Safety class SSCs.

(j) Security.

- 1 Security determination from review of Site Safeguards and Security Plan.
- 2 Incorporation of specific security needs in design.
- 3 Security escorts for construction (if necessary) funded and available.
- 4 Coordination of construction activities with security department.

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(k) Legal.

- 1 Contracting strategy.
- 2 RFP Process and Contract Award. Combine with CD-2 for design build.
- 3 NEPA determination.
- 4 Permitting arrangements.

(l) Organizational interfaces.

(m) Involvement of Related Agencies--Results of Safety Stakeholder Reviews (DNFSB and Other).

- 1 State and regulatory agency agreements.
- 2 Cooperation/collaboration agreements with agencies.
- 3 Internal agreements status.
- 4 Identify all assumptions.

5. CD-4--APPROVE START OF OPERATIONS OR PROJECT CLOSEOUT.

- a. Required Information. The following is the List of CD prerequisites from the DOE O 413.3 and the EM Program Office. This list is subject to change and will be updated when there are changes to the Order.
 - (1) Completed transition to operations planning activities, including Operational Readiness Review (ORR) and Acceptance Report.
 - (2) DOE/HQ and NNSA approved ES&H documentation.
 - (3) EM PDRI self-assessment for EM projects only.

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b. Suggested Project Preparation Topics for CDs.

- (1) The following list provides a general outline for construction scope, cost, schedule, management, and other project-related topics a project requesting typically will have investigated prior to the decision. As part of the project development process, field and Project Team members document results from the investigation of these topics. The depth and breadth of the effort in addressing these project development topics would be scaled, based upon the cost, complexity, and risks of the project. For example, not all projects will be required to follow the formal SAR process, but all projects will perform an HA.
- (2) This list is offered as an aid in preparing for a CD-4. DOE/HQ and NNSA project lessons learned and Project Management studies have shown "projects fail not because they planned to fail, but because they have failed to plan." The listing is an attempt to capture the important issues/topics which typically have caused DP project problems in the past. **NOTE:** The following lists of topics will be merged with the list of recommended review topics/lines of inquiry in the IPR Plan:
 - (a) Statement of Mission Need. Has mission need been met?
Validation document.
 - (b) Brief Description.
 - 1 Location.
 - 2 Purpose and function.
 - 3 Features.
 - 4 Long-term goals.
 - (c) Project Management.
 - 1 Staff Reduction Plan.
 - 2 Project Completion Plan.
 - 3 Transition Plan complete.

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- 4 Operating funds in place.
- 5 Federal Project Acquisition Team. Plan for continued operation of team or dissolution of team in place.

(d) Technical/Functional Requirements.

- 1 ORR has been completed.
- 2 If nuclear facility, have NRC standards been addressed?
- 3 Have project validated functional requirements been met? Design criteria?
- 4 Were authorized technical performance objectives as stated in the design met?
- 5 Was the project fully integrated with the site/systems as proposed?
- 6 Operations and Maintenance Plan is prepared/approved.
- 7 Facility staff trained in the maintenance and operation of the facility/systems.
- 8 Facility Staffing Plans implemented.

(e) Configuration Management.

- 1 As-built drawings and documents reflect facility as completed.
- 2 Configuration Management Plan is complete and approved.
- 3 Configuration management documentation integrated into operations/maintenance/safety.

(f) Acquisition Strategy.

- 1 Status of Construction Contracts. Closeout.

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2 Outstanding claims processed.

(g) Risks. Contingency status (plan against outstanding project issues).

(h) Cost and Schedule.

1 Status of funds.

2 Expected Closeout of Project. Report.

3 Schedule status.

4 Documented lessons learned.

5 "As built" complete.

(i) Environmental Status.

1 Have applicable permits, licenses, and regulatory approvals been obtained?

2 Pollution Prevention Plans or strategies executed as planned.

3 Waste minimization efforts completed.

4 Have stakeholders' concerns been fully addressed?

5 Have project benefits been fully documented in Public Participation Plans or documents?

(k) Safety.

1 Construction changes have been analyzed for effect on safety.

2 Safety component specifications are written.

3 SDDs are complete and approved.

4 FDDs updated as needed and approved.

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- 5 Formal SAR is complete and approved.
- 6 SER issued.
- 7 SDDs and FDD link to formal SAR.
- 8 As-builts control safety features.
- 9 ES&H Program Plan has been reviewed and revised as necessary.
- 10 OSHA Compliance Plan in place for operations.
- 11 DNFSB interface completed.

(l) Security.

- 1 Security requirements as stated in the DOE/HQ and NNSA Orders have been met.
- 2 Project integrated into Site Safeguards and Security Plan.
- 3 Security systems physically integrated into site security systems.
- 4 Facility specific security training and procedures are in place.
- 5 Appropriate protective force is in place.

(m) Legal.

- 1 Outstanding claims against project identified and plan to resolve addressed.
- 2 Local agreements have been satisfied.
- 3 NEPA and permitting complete.

(n) Demolition and Disposal (D&D).

- 1 D&D Plan is complete and approved.

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- 2 Agreements/contracts in place for construction/demolition debris disposal.
- (o) Organizational interfaces.
- (p) Involvement of Related Agencies.
 - 1 Compliance with state and regulatory agency agreements.
 - 2 Cooperation/collaboration processes/procedures in place with agencies.
- (q) Evaluate appropriateness of initial assumptions.

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APPENDIX D

DECISION MEMORANDUM OUTLINE

Subject: Request for ESAAB equivalent decision on CD-X (BCP) for
"PROJECT X"

To: NNSA/NV ESAAB Secretariat

Decision Needed: The "XXX" Project Management Team is requesting an NNSA/NV
ESAAB equivalent board decision on the CD-X for "PROJECT X"
(brief statement of what you are requesting).

Timing Required: Date requested for decision (i.e., decision need date).

Background: (Short background discussion of CD/BCP need relating to
project status and plans. References to attached backup
documentation to support decision. Points of contact.)

Signature block (FPM)

Enclosures
(backup documentation)

cc:
DOE/HQ and NNSA Project Support Offices (DP or EM)
Program Office (Project Advocate at DOE/HQ and NNSA)

APPENDIX E

NNSA/NV ESAAB EQUIVALENT PRESENTATION OUTLINE

The following are outlines of typical NNSA/NV ESAAB presentations:

1. CRITICAL DECISIONS.

- a. What decision is being requested from the NNSA/NV ESAAB AE.
(1 slide)
- b. Extremely brief project overview (i.e., mission and description).
(1-3 slides)
- c. Changes to project status and resolution of prior issues since last NNSA/NV ESAAB meeting.
(1-2 slides)
What progress has been made on the project since the last ESAAB meeting, including progress on AIRs and resolution of other issues.
- d. Brief summary of results of NNSA/NV ESAAB member staff review.
(1-2 slides)
Summarize results of NNSA/NV ESAAB discussions, issue resolution, and plans for newly identified AIRs.
- e. Specific Issues which require AE action.
(1 slide)
FPM and Program Office will work with board members to prepare specific major issues for presentation to AE, in advance of the NNSA/NV ESAAB for presentation and discussion. This should be reserved for issues which have significant programmatic implications.
- f. Decision approval summary.
(1 slide)
Summary of presentation and requested decision.

2. BASELINE CHANGE PROPOSALS.

- a. Describe the BCPs and present the decision requested.
(1 slide)
- b. Provide a brief description of the project.
(1 slide)
- c. Project status, BCP issues.
(1-2 slides)
Provide current project status, resolution of prior issues, and detail issues which prompted the need for the current BCP action.
- d. Scope, cost, schedule changes.
(1 slide)
List the changes to technical scope, cost, or schedule for this BCP and compare to the previous technical scope, cost, and schedule.
- e. Show the BCP log for the project and provide a verbal summary
(1 slide)
- f. Decision approval summary.
(1 slide)
Summarize presentation and requested decision.

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ACRONYMS

AC	Annual Cost
AE	Acquisition Executive
AIR	Additional Information Request
AM	Assistant Manager
AMEM	AM for Environmental Management
AMNS	AM for National Security
AMTS	AM for Technical Services
AN	Annual Cost
ANSI	American National Standards Institute
BCC	Baseline Change Control
BCP	Baseline Change Proposal
CAP	Corrective Action Plan
CD	Critical Decision
CD-0	Approve Mission Need
CD-1	Approve Preliminary Baseline Range
CD-2	Approve Performance Baseline
CD-3	Approve Start of Construction or Remedial Action
CD-4	Approve Start of Operations or Project Closeout
CDR	Conceptual Design Report
COTR	Contracting Officer Technical Representative
CPM	Contractor Project Manager
CRD	Contractor Requirements Document
D&D	Demolition and Disposal
DNFSB	Defense Nuclear Facilities Safety Board
DOE/HQ	U.S. Department of Energy Headquarters
DP	Defense Programs
EAMD	Engineering and Asset Management Division
EIR	External Independent Review
EM	Environmental Management
ER	Environmental Restoration
ES&H	Environment, Safety, and Health
ESAAB	Energy Systems Acquisition Advisory Board

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FDD	Facility Design Description
FPM	Federal Project Manager
FR	Facility Representative
HA	Hazard Analysis
ICR	Independent Cost Review
IPR	Independent Project Review
IPT	Integrated Project Team
NEPA	National Environmental Policy Act
NNSA/NV	National Nuclear Security Administration Nevada Operations Office
NRC	U.S. Nuclear Regulatory Commission
OECM	Office of Engineering and Construction Management
OMB	Office of Management and Budget
ORR	Operational Readiness Review
OSHA	Occupational Safety and Health Administration
PBMC	Performance-Based Management Contractor
PDRI	Project Definition Rating Index
PDS	Project Data Sheet
PED	Project Engineering and Design
PEP	Project Execution Plan
PM/FM	Program, Project, and Functional Manager
PSO	Program Secretarial Officer
QA	Quality Assurance
QPR	Quarterly Project Review
R&D	Research and Development
RFP	Request for Proposal
SAE	Secretarial AE
SAR	Safety Analysis Report
SDD	System Design Description
SER	Safety Evaluation Report
SME	Subject Matter Expert
SSC	Structure, System, and Component

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Page 3 (and 4)

TEC	Total Estimated Cost
TPC	Total Project Cost
TQP	Technical Qualification Program